NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

Closure of Waste Impoundments

(Number)

Code 360

DEFINITION

The closure of waste impoundments (treatment lagoons and liquid storage facilities), that are no longer used for their intended purpose, in an environmentally safe manner.

PURPOSES

This practice may be applied as part of a resource management system to support one or more of the following purposes.

- To protect the quality of surface water and groundwater resources.
- To eliminate a safety hazard for humans and livestock
- To safeguard the public health.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste impoundments that are no longer needed as a part of a waste management system and are to be permanently closed or converted.

This standard does not address the cleanup or remediation of existing groundwater pollution problems caused by the waste impoundment.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to Natural Resources Conservation Service (NRCS) standards, this practice will only apply where the investigation, as called for in the NRCS National Engineering Manual (NEM) 501.23, shows structural integrity.

CRITERIA

General Criteria Applicable to All Purposes.

The closure shall comply with all Federal, State, and local laws, rules, and regulations, including pollutant discharge elimination system requirements.

All structures used to convey waste to waste impoundments shall be removed and replaced with compacted earth material or otherwise rendered unable to convey waste.

Liquid and slurry wastes shall be agitated and pumped to the extent conventional pumping will allow. Clean water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with NRCS conservation practice standard, Waste Utilization, Code 633. The sludge remaining on the bottom and sides of the waste treatment lagoons or waste storage ponds shall be removed to the fullest extent practical and utilized in accordance with NRCS conservation practice standard, Waste Utilization, Code 633. The nutrient levels of the sludge shall be tested before application.

Land Reclamation. If not converting to fresh water use, impoundments with embankments shall be breached so that they will no longer impound water and excavated impoundments

shall be backfilled so that these areas may be reclaimed for other uses.

Where crop production is planned, all wastes must be removed and the lining or seal must be destroyed within the rooting zone.

Waste impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three feet or more above natural ground.

(1) Embankment Impoundments. Waste shall be removed from the site before the embankment is breached. The slopes and bottom of the breach shall be stable for the soil material involved, however the side slopes shall be no steeper than three horizontal to one vertical (3:1).

(2) Excavated Impoundments. The backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The finished surface shall be constructed of the material with the highest clay content available and mounded to shed rainfall runoff. Spread available topsoil where feasible to aid establishment of vegetation.

Closed waste storage structures shall be demolished or disassembled or otherwise altered to such an extent that no water can be impounded. Disassembled materials, such as pieces of metal, shall be temporarily stored until their final disposition in such a manner that they do not pose a hazard to animals or humans.

Demolished materials shall be buried onsite or moved off-site to locations designated by state or local officials. If buried on-site, the materials are to be covered with soil to a minimum settled depth of one foot, and the backfill be sufficiently mounded such that runoff will be diverted from the site after the backfill settles.

Conversion to Fresh Water Storage. The converted impoundment shall meet the requirements as set forth in the NRCS practice standard for the intended purpose. If the existing liner is to be reused, waste removal will be done in such a manner as to not damage the lining or seal of the waste structure.

Safety. Precautions (fencing and warning signs) shall be used to ensure that the pond is not used for swimming and livestock watering until water quality is adequate.

Personnel shall not enter an enclosed waste impoundment without breathing apparatus and taking other appropriate safety measures.

Protection. All disturbed areas not returned to crop production shall be vegetated using NRCS Conservation Practice Standard 342, Critical Area Planting.

Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources.

CONSIDERATIONS

Excavation equipment may be required for sludge removal where the impoundments contain large amounts of sand, soil, or other debris.

Minimize the impact of odors associated with emptying and land applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas.

Earth material to fill excavated ponds should not come from important farmlands (prime, statewide, local and/or unique).

Disassembled structural facilities may be suitable for assembly at another site. Care should be taken during closure to minimize damage to the pieces of the facility, particularly coatings that prevent corrosion of metal pieces.

If closing a waste impoundment in conjuction with state requirements, contact applicable regulating authority prior to backfilling the site.

PLANS AND SPECIFICATIONS

Plans and specifications for closure of abandoned waste treatment lagoons and waste storage ponds shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall also be consistent with the requirements of that standard.

OPERATION AND MAINTENANCE

The proper closure of a waste treatment lagoon or waste storage pond should require little or no operation and maintenance. However, if it is converted to another use, such as a fresh water pond, operation and maintenance shall be in accordance with the needs as set forth in NRCS conservation practice standard for the intended purpose.

REFERENCES

Closure of Earthen Manure Storages, Purdue University, Cooperative Extension Service, West Lafayette, IN.